

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently amended). A recloser control apparatus compatible with various reclosers, comprising: ~~a protective relay for power lines responsive to voltage and current values from the power line to identify faults present on the power line and in combination with a recloser apparatus to restore power to selected areas of the power system which have been initially put out of service in response to a fault indication; and~~

a control interface system capable of providing control signals for a plurality of different reclosers having different control requirements, the interface system including a convertible charging system capable of adaptable for producing control voltages for controlling trip and close coils apparatuses of various reclosers having different control voltage requirements.

Claim 2 (Currently amended). The apparatus of claim 1, including an input power converter for providing the control interface, including the charging system with a 12 volt bus signal, the power converter being responsive to a source voltage to produce the 12 volt bus signal.

Claim 3 (Original). The apparatus of claim 1, including a DC/DC converter for producing the voltages necessary to power the recloser control apparatus from the 12 volt DC bus line.

Claim 4 (Currently amended). The apparatus of claim 1, wherein the charging system includes an input capacitor, a flyback ~~transmitter~~ transformer, a switching element with a control circuit, an output filter and a capacitor discharge circuit for producing the selected voltages for the trip and close apparatus coils of the recloser.

Claim 5 (Original). The apparatus of claim 1, including a 12 volt battery, a battery charge control logic circuit and a battery charger circuit for maintaining the battery in a charged condition.

Claim 6 (Original). The apparatus of claim 1, including a housing which includes a removable plate in one portion thereof, wherein the removable plate includes an opening which is correctly sized for wiring connector between the recloser control apparatus and the recloser.

Claim 7 (Original). The apparatus of claim 1, including a housing for the apparatus having front and rear doors for access to the front and rear of the apparatus, each of said doors being separately and independently lockable.

Claim 8 (New). The apparatus of claim 1, further comprising a circuit for producing a control voltage for controlling a trip and close apparatus for a particular recloser, and wherein the convertible charging system is adaptable for producing another control voltage for controlling a trip and close apparatus for at least another recloser.

Claim 9 (New). The apparatus of claim 8, wherein the control voltage produced by the circuit is 12 volts.

Claim 10 (New). The apparatus of claim 8, wherein the control voltage produced by the convertible charging system is greater than 12 volts.

Claim 11 (New). The apparatus of claim 10, wherein the control voltage produced by the convertible charging system is 24 volts.

Claim 12 (New). The apparatus of claim 10, wherein the control voltage produced by the convertible charging system is 53 volts.

Claim 13 (New). The apparatus of claim 10, wherein the trip and close apparatuses are trip and close coils.

Claim 14 (New). A control interface system capable of providing control signals for a plurality of different reclosers having different control requirements, the interface system, comprising:

a circuit for producing a control voltage for controlling a trip and close apparatus for a particular recloser, and

a convertible charging system adaptable for producing another control voltage for controlling a trip and close apparatus for another recloser.

Claim 15 (New). The apparatus of claim 14, wherein the convertible charging system is coupled to the circuit and includes a capacitor charger for storing energy produced by the circuit.

Claim 16 (New). The apparatus of claim 14, wherein the charging system further includes a flyback transformer, a switching element with a control circuit, an output filter and a capacitor discharge circuit for producing the selected voltages for the trip and close apparatuses of the recloser.

Claim 17 (New). The apparatus of claim 14, wherein the control voltage produced by the circuit is 12 volts.

Claim 18 (New). The apparatus of claim 14, wherein the control voltage produced by the convertible charging system is greater than 12 volts.

Claim 19 (New). The apparatus of claim 14, wherein the control voltage produced by the convertible charging system is 24 volts.

Claim 20 (New). The apparatus of claim 14, wherein the control voltage produced by the convertible charging system is 53 volts.

Claim 21 (New). A method for producing control voltages for controlling trip and close apparatuses of various reclosers having different control voltage requirements, the method comprising the steps of:

supplying a voltage bus signal to a convertible charging system,
storing voltage from the voltage bus signal in the convertible charging system,
and

supplying the stored voltage from the convertible charging system as a control voltage to control trip and close apparatuses of one of the reclosers.

Claim 22 (New). The method of claim 21, wherein the convertible charging system includes a capacitor charger for storing voltage from the voltage bus signal.

Claim 23 (New). The method of claim 21, wherein the convertible charging system is supplied with a 12 volt bus signal.

Claim 24 (New). The method of claim 23, wherein the 12 volt bus signal is supplied using a 12 volt battery, the method further including maintaining the 12 volt bus signal in a charged condition.

Claim 25 (New). The method of claim 21, further comprising supplying voltage directly from the voltage bus signal as a control voltage to control trip and close apparatuses of one of the reclosers.